

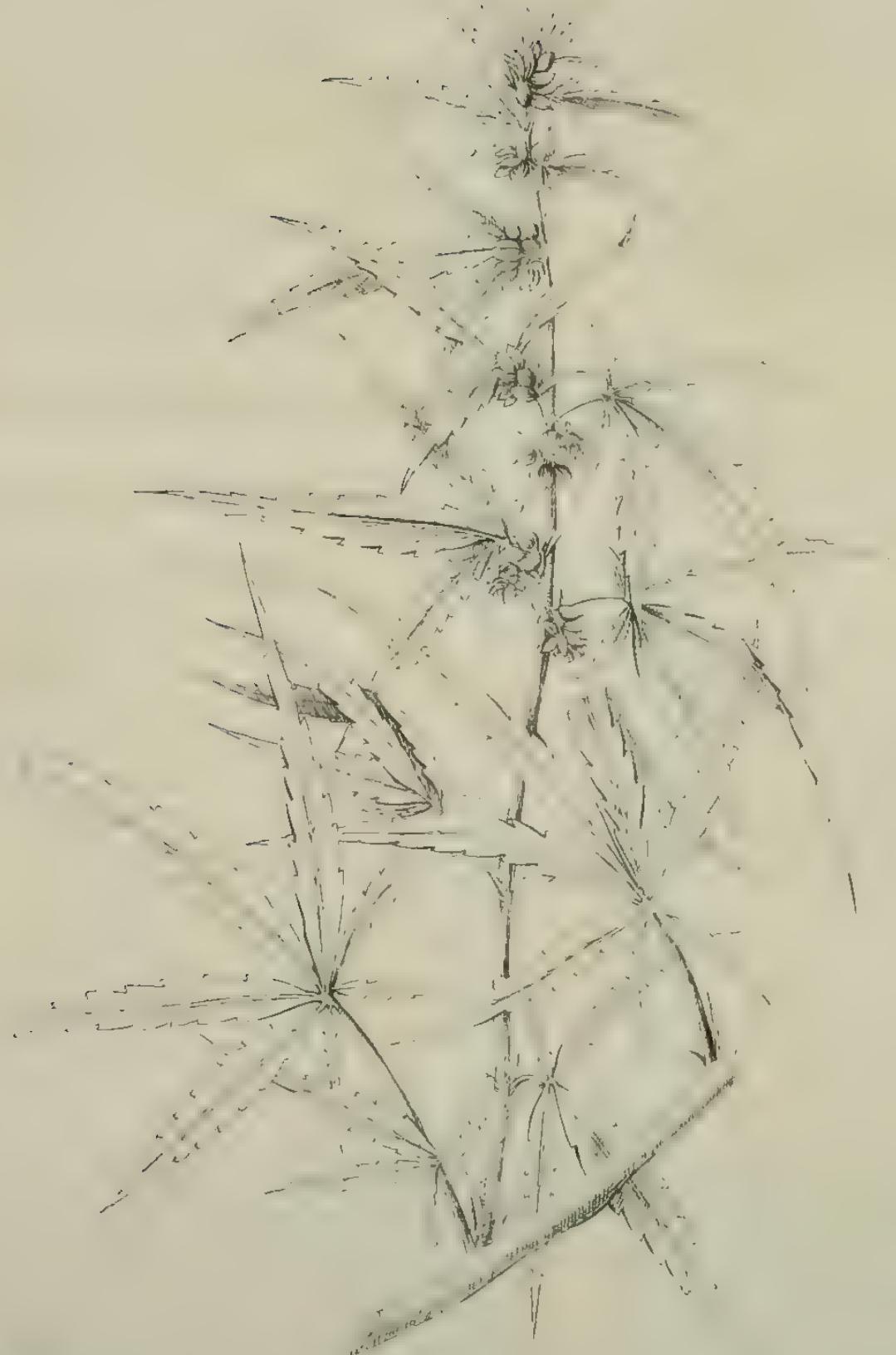
ART. VII.—*Extract from a Memoir on the Preparations of the Indian Hemp, or Gunjah, (Cannabis Indica) their effects on the Animal system in Health, and their utility in the Treatment of Tetanus and other Convulsive Diseases.—By W. B. O'SHAUGHNESSY, M. D. Professor in the Medical College of Calcutta, &c. &c.**

The narcotic effects of Hemp are popularly known in the south of Africa, South America, Turkey, Egypt, Asia Minor, India, and the adjacent territories of the Malays, Burmese, and Siamese. In all these countries Hemp is used in various forms, by the dissipated and depraved, as the ready agent of a pleasing intoxication. In the popular medicine of these nations, we find it extensively employed for a multitude of affections. But in western Europe its use either as a stimulant or as a remedy, is equally unknown. With the exception of the trial, as a frolic, of the Egyptian “Hasheesh,” by a few youths in Marseilles, and of the clinical use of the wine of Hemp by Hahneman, as shewn in a subsequent extract, I have been unable to trace any notice of the employment of this drug in Europe.

Much difference of opinion exists on the question, whether the Hemp so abundant in Europe, even in high northern latitudes, is identical in specific characters with the Hemp of Asia Minor and India. The extraordinary symptoms produced by the latter depend on a resinous secretion with which it abounds, and which seems totally absent in the European kind. The closest physical resemblance or even identity exists between both plants—difference of climate seems to me more than sufficient to account for the absence of the resinous

* Read before the Medical and Physical Society of Calcutta, on the 2d October, 1839.

We have extracted from this paper the sections relative to the popular uses and the effects on the animal system of these singular and valuable narcotics—for the professional details of cases, which we considered unsuited to our pages, we have to refer the reader to the *Transactions of the Medical and Physical Society*, current volume, fasciculus, for November, 1839.—EDS.



Graminei
2 George Willd.

Cannabis Indica.

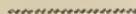
(Ganjah)
T Black Asiatic Silk Rose

Flowering
Lignoculus

secretion, and consequent want of narcotic power in that indigenous in colder countries.

In the subsequent article I first endeavour to present an adequate view of what has been recorded of the early history, the popular uses, and employment in medicine of this powerful and valuable substance ; I then proceed to notice several experiments which I have instituted on animals, with the view to ascertain its effects on the healthy system ; and, lastly, I submit an abstract of the clinical details of the treatment of several patients afflicted with hydrophobia, tetanus, and other convulsive disorders, in which a preparation of Hemp was employed with results, which seem to me to warrant our anticipating from its more extensive and impartial use no inconsiderable addition to the resources of the physician.

In the historical and statistical department of the subject, I owe my cordial thanks for most valuable assistance to the distinguished traveller the Syed Keramut Ali, Mootawlee of the Hooghly Imambarrah, and also to the Hakim Mirza Abdul Razes of Teheran, who have furnished me with interesting details regarding the consumption of Hemp in Candahar, Cabul, and the countries between the Indus and Herat. The Pandit Moodoosudun Gooptu has favoured me with notices of the statements regarding Hemp in the early Sanscrit authors on *Materia Medica* ;—to the celebrated Kamalakantha Vidyalanka, the Pandit of the Asiatic Society, I have also to record my acknowledgments ;—Mr. DaCosta has obligingly supplied me with copious notes from the 'Mukzun-ul-Udwieh' and other Persian and Hindee systems of *Materia Medica*. For information relative to the varieties of the drug, and its consumption in Bengal, Mr. McCann, the Deputy Superintendent of Police, deserves my thanks ;—and, lastly, to Dr. Goodeve, to Mr. Richard O'Shaughnessy, to the late Dr. Bain, to Mr. O'Brien of the Native Hospital, and Nobinchunder Mitter, Sub-Assistant Surgeon, I feel deeply indebted for the clinical details with which they have enriched the subject.



SECTION I.

Botanical characters—Chemical Properties—Production.

BOTANICAL DESCRIPTION.—Assuming with Lindley and other eminent writers that the *Cannabis sativa* and *Indica* are identical, we find that the plant is dioecious, annual, about three feet high, covered over with a fine pubescence; the stem is erect, branched, bright green, angular; leaves, alternate or opposite, on long weak petioles; digitate, scabrous, with linear, lanceolate, sharply serrated leaflets, tapering into a long smooth entire point; stipules subulate; clusters of flowers axillary with subulate bracts; males lax and drooping, branched and leafless at base; females erect, simple and leafy at the base. ♂ Calyx downy, five parted, imbricated. Stamens five; anthers large and pendulous. ♀ Calyx covered with brown glands. Ovary roundish with pendulous ovule, and two long filiform glandular stigmas; achenium ovoid, one seeded.—*v. Lindley's Flora Medica*, p. 299.*

The fibres of the stems are long and extremely tenacious, so as to afford the best tissue for cordage, thus constituting the material for one of the most important branches of European manufactures.

The seed is simply albuminous and oily, and is devoid of all narcotic properties.

CHEMICAL PROPERTIES.—In certain seasons and in warm countries a resinous juice exudes and concretes on the leaves, slender stems, and flowers;—the mode of removing this juice will be subsequently detailed. Separated and in masses it constitutes the *Churrus†* of Nipal and Hindostan, and to this the type, or basis of all the Hemp preparations, are the powers of these drugs attributable.

The resin of the Hemp is very soluble in alcohol and ether; partially soluble in alkaline; insoluble in acid solutions; when pure, of a blackish grey colour; hard at 90°; softens at higher temperatures, and fuses readily;—soluble in the fixed and in several volatile oils. Its

* The drawing which illustrates this paper has been copied by my accomplished friend Dr. George Wallich, from Roxburgh's unpublished plate.

† For very fine specimens of *Churrus*, I have to express my thanks to Dr. Campbell, late assistant Resident at Nipal.

odour is fragrant and narcotic ; taste slightly warm, bitterish, and acrid.

The dried Hemp plant which has flowered and *from which the resin has not been removed* is called *Gunjah*. It sells for twelve annas to one rupee the seer, in the Calcutta bazars, and yields to alcohol twenty per 100 of resinous extract, composed of the resin (*churrus*), and green colouring matter (*chlorophylle*). Distilled with a large quantity of water, traces of essential oil pass over, and the distilled liquor has the powerful narcotic odour of the plant. The *Gunjah* is sold for smoking chiefly. The bundles of *Gunjah* are about two feet long and three inches in diameter, and contain twenty-four plants. The colour is dusky green—the odour agreeably narcotic—the whole plant resinous and adhesive to the touch.

The larger leaves and capsules without the stalks, are called “*Bang, Subjee or Sidhee*.” They are used for making an intoxicating drink, for smoking, and in the conserve or confection termed *Majoon*. *Bang* is cheaper than *Gunjah*, and though less powerful, is sold at such a low price that for one pice enough can be purchased to intoxicate an “experienced” person.

According to Mr. McCann’s notes, the *Gunjah* consumed in Bengal is chiefly brought from Mirzapur and Ghazeepore, being extensively cultivated near Gwalior and in Tirhoot. The natives cut the plant when in flower, allow it to dry for three days, and then lay it in bundles averaging one seer weight each, which are distributed to the licensed dealers. The best kinds are brought from Gwalior and Bhurtpore, and it is also cultivated, of good quality, in a few gardens round Calcutta. In Jessore, I am informed, the drug is produced of excellent quality, and to a very considerable extent of cultivation.

In Central India and the Saugor territory and in Nipal, *Churrus* is collected during the hot season in the following singular manner. Men clad in leathern dresses run through the Hemp-fields brushing through the plant with all possible violence ; the soft resin adheres to the leather, and is subsequently scraped off and kneaded into balls, which sell from five to six rupees the seer. A still finer kind, the *Momeea* or waxen *Churrus*, is collected by the hand in Nipal, and sells for nearly double the price of the ordinary kind. In Nipal, Dr. McKinnon informs me, the leathern attire is dispensed with, and the resin is gathered on

the skins of naked coolies. In Persia, it is stated by Mirza Abdul Razes that the *Churrus* is prepared by pressing the resinous plant on coarse cloths, and then scraping it from these and melting it in a pot with a little warm water. He considers the *Churrus* of Herat as the best and most powerful of all the varieties of the drug.

SECTION II.

Popular uses.

The preparations of Hemp are used for the purpose of intoxication as follows.

Sidhee, Subjee, and Bang (synonymous) are used with water as a drink, which is thus prepared. About three tola weight, 540 troy grains, are well washed with cold water, then rubbed to powder, mixed with black pepper, cucumber and melon seeds, sugar, half a pint of milk, and an equal quantity of water. This is considered sufficient to intoxicate an habituated person. Half the quantity is enough for a novice. This composition is chiefly used by the Mahomedans of the better classes.

Another recipe is as follows.

The same quantity of *Sidhee* is washed and ground, mixed with black pepper, and a quart of cold water added. This is drank at one sitting. This is the favorite beverage of the Hindus who practice this vice, especially the Birjobassies and many of the Rajpootana soldiery.

From either of these beverages intoxication will ensue in half an hour. Almost invariably the inebriation is of the most cheerful kind, causing the person to sing and dance, to eat food with great relish, and to seek aphrodisiac enjoyments. In persons of a quarrelsome disposition it occasions, as might be expected, an exasperation of their natural tendency. The intoxication lasts about three hours, when sleep supervenes. No nausea or sickness of stomach succeeds, nor are the bowels at all affected; next day there is slight giddiness and vascularity of the eyes, but no other symptom worth recording.

Gunjah is used for smoking alone—one rupee weight, 180 grains, and a little dried tobacco are rubbed together in the palm of the hand with a few drops of water. This suffices for three persons. A little

tobacco is placed in the pipe first, then a layer of the prepared *Gunjah*, then more tobacco, and the fire above all.

Four or five persons usually join in this debauch. The hookah is passed round, and each person takes a single draught. Intoxication ensues almost instantly; and from one draught to the unaccustomed, within half an hour; and after four or five inspirations to those more practised in the vice. The effects differ from those occasioned by the *Sidhee*. Heaviness, laziness, and agreeable reveries ensue, but the person can be readily roused, and is able to discharge routine occupations, such as pulling the punkah, waiting at table, &c.

The *Majoon*, or Hemp confection, is a compound of sugar, butter, flour, milk, and *Sidhee* or *Bang*. The process has been repeatedly performed before me by Ameer, the proprietor of a celebrated place of resort for Hemp devotees in Calcutta, and who is considered the best artist in his profession. Four ounces of *Sidhee* and an equal quantity of *Ghee* are placed in an earthen or well-tinned vessel, a pint of water added, and the whole warmed over a charcoal fire. The mixture is constantly stirred until the water all boils away, which is known by the crackling noise of the melted butter on the sides of the vessel; the mixture is then removed from the fire, squeezed through cloth while hot—by which an oleaginous solution of the active principles and colouring matter of the Hemp is obtained—and the leaves, fibres, &c., remaining on the cloth are thrown away.

The green oily solution soon concretes into a buttery mass, and is then well washed by the hand with soft water so long as the water becomes coloured. The colouring matter and an extractive substance are thus removed, and a very pale green mass, of the consistence of simple ointment, remains. The washings are thrown away;—Ameer says that these are intoxicating, and produce constriction of the throat, great pain, and very disagreeable and dangerous symptoms.

The operator then takes two pounds of sugar, and adding a little water places it in a pipkin over the fire. When the sugar dissolves and froths, two ounces of milk are added; a thick scum rises and is removed—more milk and a little water are added from time to time, and the boiling continued about an hour, the solution being carefully stirred until it becomes an adhesive clear syrup, ready to solidify on a cold surface; four ounces of tyre (new milk dried before the sun) in fine powder are

now stirred in, and lastly the prepared butter of Hemp is introduced, brisk stirring being continued for a few minutes. A few drops of uttar of roses are then quickly sprinkled in, and the mixture poured from the pipkin on a flat cold dish or slab. The mass concretes immediately into a thin cake, which is divided into small lozenge-shaped pieces. A seer thus prepared sells for four rupees: one drachm by weight will intoxicate a beginner; three drachms one experienced in its use. The taste is sweet, and the odour very agreeable.

✓ Ameer states that there are seven or eight *Majoon* makers in Calcutta;—that sometimes by special order of customers he introduces stramonium seeds, but never nux-vomica;—that all classes of persons, including the lower Portuguese or “Kala Feringhees,” and especially their females, consume the drug;—that it is most fascinating in its effects, producing extatic happiness, a persuasion of high rank, a sensation of flying, voracious appetite, and intense aphrodisiac desire. He denies that its continued use leads to madness, impotence, or to the numerous evil consequences described by the Arabic and Persian physicians. Although I disbelieve Ameer’s statements on this point, his description of the immediate effects of *Majoon* is strictly and accurately correct. ◦

Most carnivorous animals eat it greedily, and very soon experience its narcotic effects, becoming ludicrously drunk, but seldom suffering any worse consequences.

SECTION III.

Historical details—Notices of Hemp, and its popular uses, by the Sanscrit, Arabic, and Persian writers.

The preceding notice suffices to explain the subsequent historical and medicinal details. I premise the historical, in order to shew the exact state of our knowledge of the subject, when I attempted its investigation.

Although the most eminent of the Arabic and Persian authors concur in referring the origin of the practice of Hemp intoxication to the natives of Hindoostan, it is remarkable that few traces can be detected of the prevalence of the vice at any early period in India.

The Pandit Moodoosudun Gooptu finds that the "Rajniguntu," a standard treatise on *Materia Medica*, which he estimates vaguely at 600 years date, gives a clear account of this agent. Its synomyms are "Bijoya," "Ujoya," and "Joya,"—names which mean, promoters of success; "Brijputta," or the strengthener, or the strong-leaved; "Chapola," the causer of a reeling gait; "Ununda," or the laughter-moving; "Hursini," the exciter of sexual desire. Its effects on man are described as excitant, heating, astringent. It is added that it "destroys phlegm, expels flatulence, induces costiveness, sharpens the memory, increases eloquence, excites the appetite, and acts as a general tonic."

The "Rajbulubha," a Sanscrit treatise of rather later date, alludes to the use of Hemp in gonorrhæa, and repeats the statements of the "Rajniguntu." In the Hindu Tantra, or a religious treatise, teaching peculiar and mystical formulæ and rites for the worship of the deities, it is said, moreover, that *Sidhee* is more intoxicating than wine.

In the celebrated "Susruta," which is perhaps the most ancient of all Hindu medical works, it is written, that persons labouring under catarrh should, with other remedies, use internally the *Bijoya* or *Sidhee*. The effects however are not described.

The learned Kamalakantha Vidyalanka has traced a notice of Hemp in the 5th chapter of *Menu*, where Brahmins are prohibited to use the following substances, *Palandoor* or onions, *Gunjara* or *Gunjah*, and such condiments as have strong and pungent scents.

The Arabic and Persian writers are however far more voluminous and precise in their accounts of these fascinating preparations. In the 1st vol. of De Sacy's "Crestomathie Arabe" we find an extremely interesting summary of the writings of Takim Eddin Makrizi on this subject. Lane has noticed it too with his usual ability in his admirable work "the Modern Egyptians." From these two sources, the MS. notes of the Syed Keramut Ali and Mr. DaCosta, and a curious paper communicated by our friend Mirza Abdul Razes, a most intelligent Persian physician, the following epitome is compiled.

Makrizi treats of the Hemp in his glowing description of the celebrated Canton de la Timbaliere, or ancient pleasure grounds, in the vicinity of Cairo. This quarter, after many vicissitudes, is now a heap of ruins. In it was situated a cultivated valley named Djoneina, which we are informed was the theatre of all conceivable abomina-

tions. It was famous above all for the sale of the *Hasheeha*, which is still greedily consumed by the dregs of the populace, and from the consumption of which sprung the excesses which led to the name of "Assassin" being given to the Saracens in the Holy Wars. The history of the drug the author treats of thus:—The oldest work in which Hemp is noticed is a treatise by Hasan, who states that in the year 658, m. e. the Sheikh Djafar Shirazi, a monk of the order of Haider, learned from his master the history of the discovery of Hemp. Haider, the chief of ascetics and self-chasteners, lived in rigid privation on a mountain between Nishabor and Ramah, where he established a monastery of Fakirs. Ten years he had spent in this retreat without leaving it for a moment, till one burning summer's day when he departed alone to the fields. On his return an air of joy and gaiety was imprinted on his countenance ; he received the visits of his brethren and encouraged their conversation. On being questioned, he stated that struck by the aspect of a plant which danced in the heat as if with joy, while all the rest of the vegetable creation was torpid, he had gathered and eaten of its leaves. He led his companions to the spot,—all ate and all were similarly excited. A tincture of the Hemp leaf in wine or spirit seems to have been the favorite formula in which the Sheikh Haider indulged himself. An Arab poet sings of Haider's *emerald* cup—an evident allusion to the rich green colour of the tincture of the drug. The Sheikh survived the discovery ten years, and subsisted chiefly on this herb, and on his death his disciples by his desire planted it in an arbour about his tomb.

From this saintly sepulchre the knowledge of the effects of Hemp is stated to have spread into Khorasan. In Chaldea it was unknown until 728 m. e. during the reign of the Khalif Mostansir Billah : the kings of Ormus and Bahrein then introduced it into Chaldea, Syria, Egypt, and Turkey.

In Khorasan however, it seems that the date of the use of Hemp is considered to be far prior to Haider's era. Biraslan, an Indian pilgrim, the contemporary of Cosrœs,* is believed to have introduced and

* By this term is probably meant the first of the Sassanian dynasty, to whom the epithet "of Khusrow" or Cosrœs, equivalent to Káiser, Cæsar, or Czar, has been applied in many generations. This dynasty endured from A. D. 202 to A. D. 636—*Vide note 50 to Lane's translation of the Arabian Nights, vol. ii. p. 226.*

diffused the custom through Khorasan and Yemen. In proof of the great antiquity of the practice, certain passages in the works of Hippocrates may be cited, in which some of its properties are clearly described—but the difficulty of deciding whether the passages be spurious or genuine, renders the fact of little value. Dioscorides (lib. ij. cap. 169,) describes Hemp, but merely notices the emollient properties of its seeds—its intoxicating effects must consequently be regarded as unknown to the Greeks prior to his era, which is generally agreed to be about the second century of the Christian epoch, and somewhat subsequent to the lifetime of Pliny.

In the narrative of Makrizi we also learn that oxymel and acids are the most powerful antidotes to the effects of this narcotic; next to these, emetics, cold bathing, and sleep; and we are further told that it possesses diuretic, astringent, and especially aphrodisiac properties. Ibn Beitar was the first to record its tendency to produce mental derangement, and he even states that it occasionally proves fatal.

In 780 m. e. very severe ordinances were passed in Egypt against the practice: the Djoneina garden was rooted up, and all those convicted of the use of the drug were subjected to the extraction of their teeth; but in 799 the custom re-established itself with more than original vigour. Makrizi draws an expressive picture of the evils this vice then inflicted on its votaries—"As its consequence, general corruption of sentiments and manners ensued, modesty disappeared, every base and evil passion was openly indulged in, and nobility of external form alone remained to these infatuated beings."

SECTION IV.

Medicinal properties assigned to Hemp by the ancient Arabian and Persian writers, and by modern European authors.

In the preceding notice of Makrizi's writings on this subject we have confined ourselves chiefly to historical details, excluding descriptions of supposed medicinal effects. The Mukzun-ul-Udwieh and the Persian MS. in our possession, inform us as to the properties which the ancient physicians attributed to this powerful narcotic.

In Mr. DaCosta's MS. version of the chapter on Hemp in the *Mukzun-ul-Udwieh, Churrus*, we are informed, if smoked through a pipe causes torpor and intoxication, and often proves fatal to the smoker. Three kinds are noticed, the *garden*, *wild*, and *mountain*, of which the last is deemed the strongest;—the seeds are called *sheadana* or *shaldaneh* in Persia. These are said to be “a compound of opposite qualities, cold and dry in the third degree, that is to say, stimulant and sedative, imparting at first a gentle reviving heat, and then a considerable refrigerant effect.”

The contrary qualities of the plant, its stimulant and sedative effects, are prominently dwelt on. “They at first exhilarate the spirits, cause cheerfulness, give colour to the complexion, bring on intoxication, excite the imagination into the most rapturous ideas, produce thirst, increase appetite, excite concupiscence. Afterwards the sedative effects begin to preside, the spirits sink, the vision darkens and weakens; and madness, melancholy, fearfulness, dropsy, and such like distempers, are the sequel—and the seminal secretions dry up. These effects are increased by sweets, and combated by acids.”

The author of the *Mukzun-ul-Udwieh* further informs us—

“The leaves make a good snuff for deterging the brain; the juice of the leaves applied to the head as a wash, removes dandriff and vermin; drops of the juice thrown into the ear allay pain and destroy worms or insects. It checks diarrhoea, is useful in gonorrhœa, restrains seminal secretions, and is diuretic. The bark has a similar effect.”

“The powder is recommended as an external application to fresh wounds and sores, and for causing granulations; a poultice of the boiled root and leaves for discussing inflammations, and cure of erysipelas, and for allaying neuralgic pains. The dried leaves bruised and spread on a castor oil leaf cure hydrocele and swelled testes. The dose internally is one *direm*, or 48 grains. The antidotes are emetics, cow's milk, hot water, and sorrel wine.”

Alluding to its popular uses, the author dwells on the eventual evil consequences of the indulgence;—weakness of the digestive organs first ensues, followed by flatulency, indigestion, swelling of the limbs and face, change of complexion, diminution of sexual vigor, loss of teeth, heaviness, cowardice, depraved and wicked ideas, scepticism in religi-

1839.] *On the preparations of the Indian Hemp, or Gunjah.* 743
ous tenets ;—licentiousness and ungodliness are also enumerated in the catalogue of deplorable results.

The medicinal properties of Hemp, in various forms, are the subject of some interesting notes by Mirza Abdul Razes. “ It produces a ravenous appetite and constipation, arrests the secretions except that of the liver, excites wild imagining, especially a sensation of ascending, forgetfulness of all that happens during its use, and such mental exaltation, that *the beholders attribute it to supernatural inspiration.*”

Mirza Abdul considers Hemp to be a powerful exciter of the flow of bile, and relates cases of its efficacy in restoring appetite—of its utility as an external application as a poultice with milk, in relieving haemorrhoids—and internally in gonorrhœa to the extent of a quarter drachm of *bangh*. He states also that the habitual smokers of *Gunjah* generally die of diseases of the lungs, dropsy, and anasarca—“ so do the eaters of *Majoon* and smokers of *Sidhee*, but at a later period. The inexperienced on first taking it are often senseless for a day, some go mad, others are known to die.”

In the 35th chapter of the 5th volume of Rumphius’ *Herbarium Amboinense*, p. 208, Ed. Amsterd. A. D. 1695, we find a long and very good account of this drug, illustrated by two excellent plates. The subjoined is an epitome of Rumphius’ article.

Rumphius first describes botanically the male and female Hemp plants, of which he gives two admirable drawings. He assigns the upper provinces of India as its *habitat*, and states it to be cultivated in Java and Amboyna. He then notices very briefly the exciting effects ascribed to the leaf, and to mixtures thereof with spices, camphor, and opium. He alludes doubtfully to its alleged aphrodisiac powers, and states that the kind of mental excitement it produces depends on the temperament of the consumer. He quotes a passage from Galen, lib. i. (de aliment, facult) in which it is asserted that in that great writer’s time it was customary to give Hemp seed to the guests at banquets as promoters of hilarity and enjoyment. Rumphius adds, that the Mahomedans in his neighbourhood frequently sought for the male plant from his garden to be given to persons afflicted with virulent gonorrhœa and with asthma, or the affection which is popularly called “ stitches in the side.” He tells us, moreover, that the powdered